

Idaho National Engineering and Environmental Laboratory

RELAP5-3D RGUI Java Interface

***Presented by
Guy Grinnell &
Dr. George L. Mesina***

***2003 RELAP5 International
Users Seminar***

August 27-29, 2003



Outline

- **JAVA**
- **RGUI major screens**
- **New features**
- **Future developments**

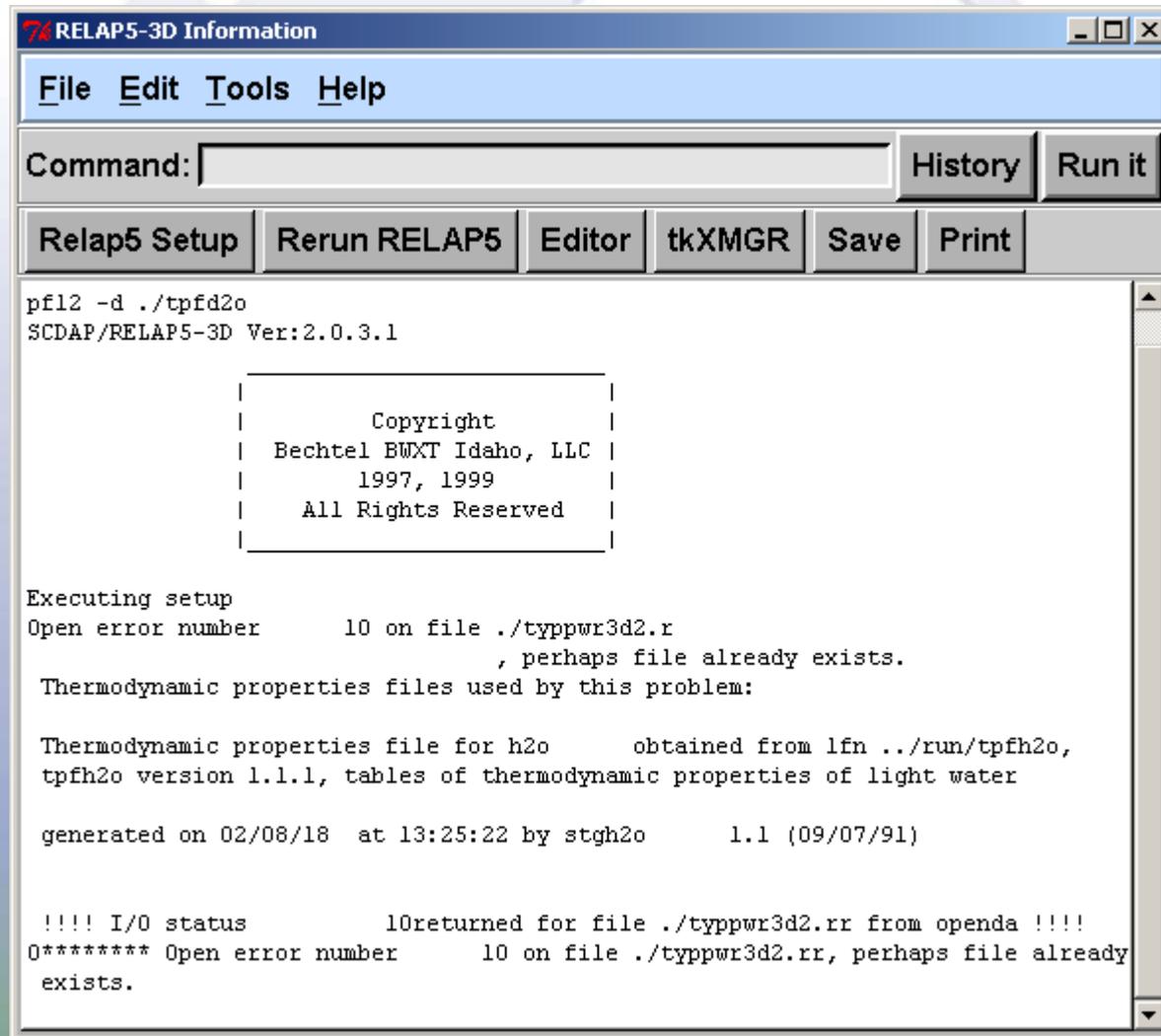
Reasons to Rewrite RGUI in Java

- ***Free versions of TCL/TK essentially stopped development***
 - Certain problems will not be fixed
 - New features are not available
- ***Reduce cost of maintenance and development***
- ***Extensive literature and development tools***
- ***Consistent***

RGUI Information Station RIS

- ***The Central area where various tools are started***
 - RELAP5-3D
 - Text Editor
 - Pygmalion
 - Graphing Tools
- ***Multiple Sessions of RELAP or other tools may be Run***

RELAP5 3D-Station, from RGUI 2.2



```
RELAP5-3D Information
File Edit Tools Help
Command:
History Run it
Relap5 Setup Rerun RELAP5 Editor tkXMGR Save Print
pfl2 -d ./tpfd2o
SCDAP/RELAP5-3D Ver:2.0.3.1

      Copyright
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Executing setup
Open error number      10 on file ./typpwr3d2.r
                        , perhaps file already exists.

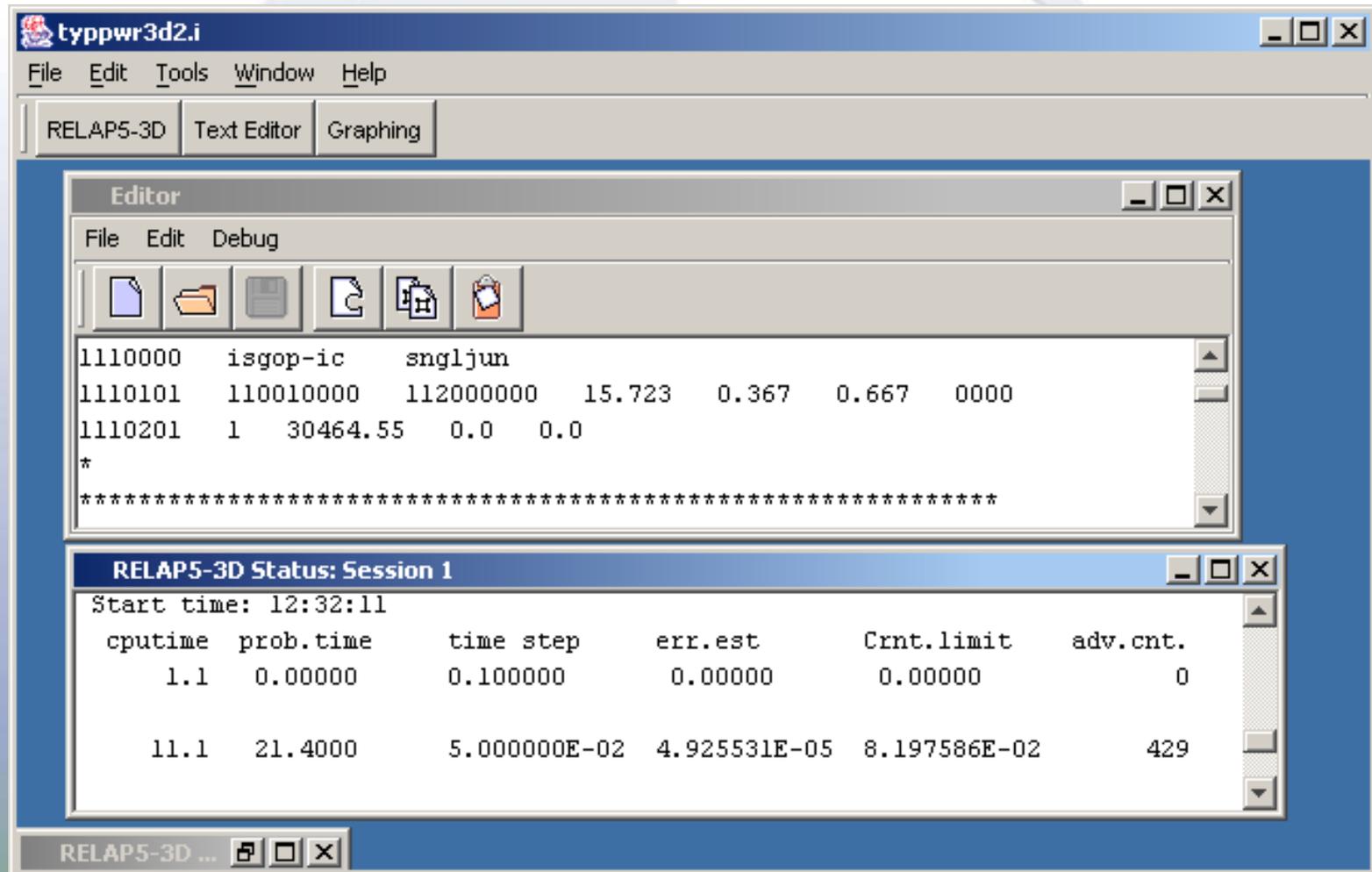
Thermodynamic properties files used by this problem:

Thermodynamic properties file for h2o      obtained from lfn ../run/tpfh2o,
tpfh2o version 1.1.1, tables of thermodynamic properties of light water

generated on 02/08/18 at 13:25:22 by stgh2o      1.1 (09/07/91)

!!!! I/O status      10 returned for file ./typpwr3d2.rr from openda !!!!
***** Open error number      10 on file ./typpwr3d2.rr, perhaps file already
exists.
```

New RGUI Information Station



The screenshot displays the RELAP5-3D RGUI interface. The main window, titled 'typwr3d2.i', contains a menu bar (File, Edit, Tools, Window, Help) and a toolbar with buttons for 'RELAP5-3D', 'Text Editor', and 'Graphing'. An 'Editor' window is open, showing a text editor with a menu bar (File, Edit, Debug) and a toolbar with icons for file operations. The editor contains the following text:

```

1110000  isgop-ic  sngljun
1110101  110010000  112000000  15.723  0.367  0.667  0000
1110201  1  30464.55  0.0  0.0
*
*****
    
```

Below the editor is a 'RELAP5-3D Status: Session 1' window. It displays the start time and a table of simulation parameters:

```

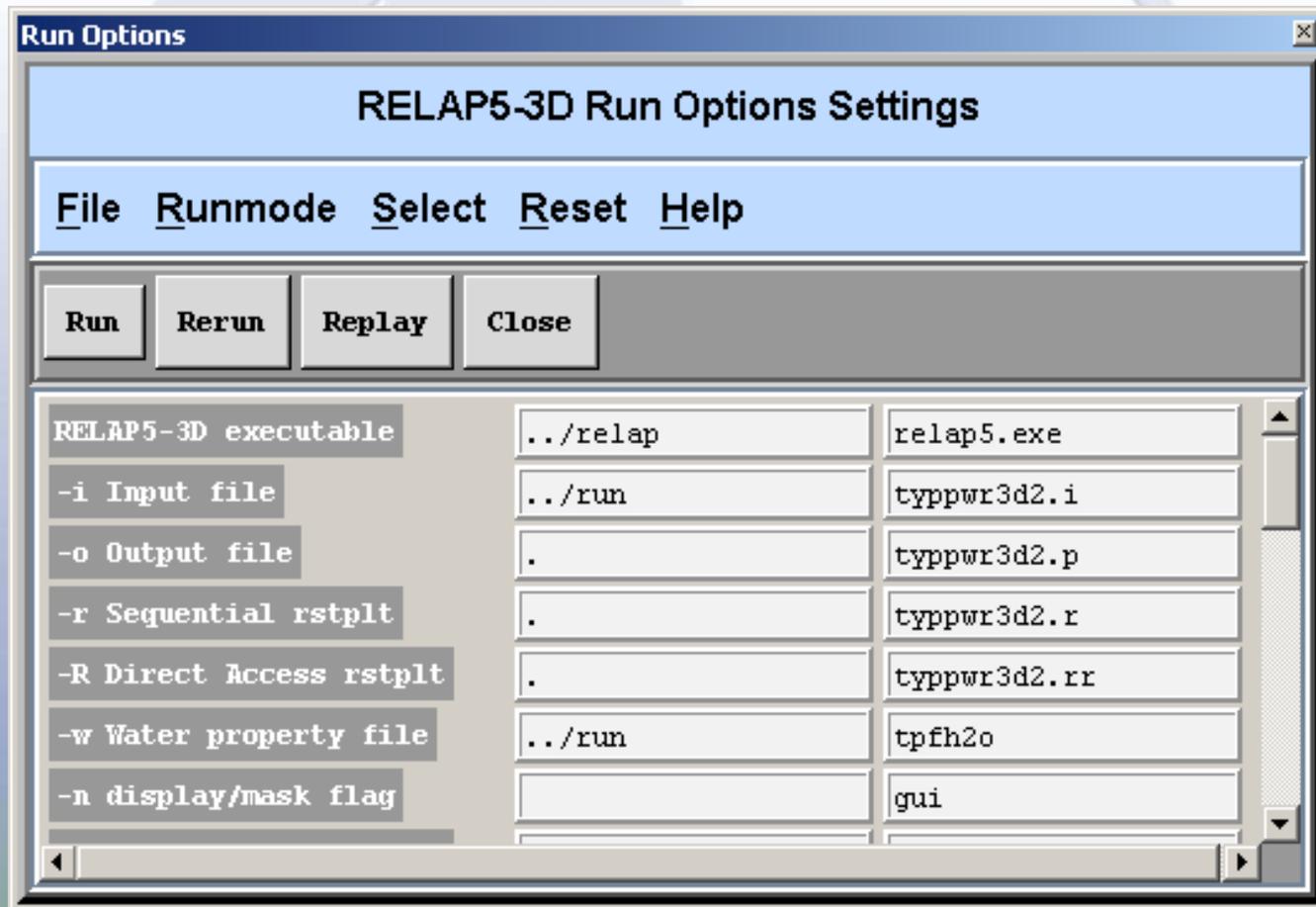
RELAP5-3D Status: Session 1
Start time: 12:32:11
  cputime  prob.time  time step  err.est  Crnt.limit  adv.cnt.
    1.1    0.00000    0.100000    0.00000    0.00000     0
  11.1    21.4000    5.000000E-02  4.925531E-05  8.197586E-02  429
    
```

The bottom of the interface shows a taskbar with a button labeled 'RELAP5-3D ...' and standard window control icons.

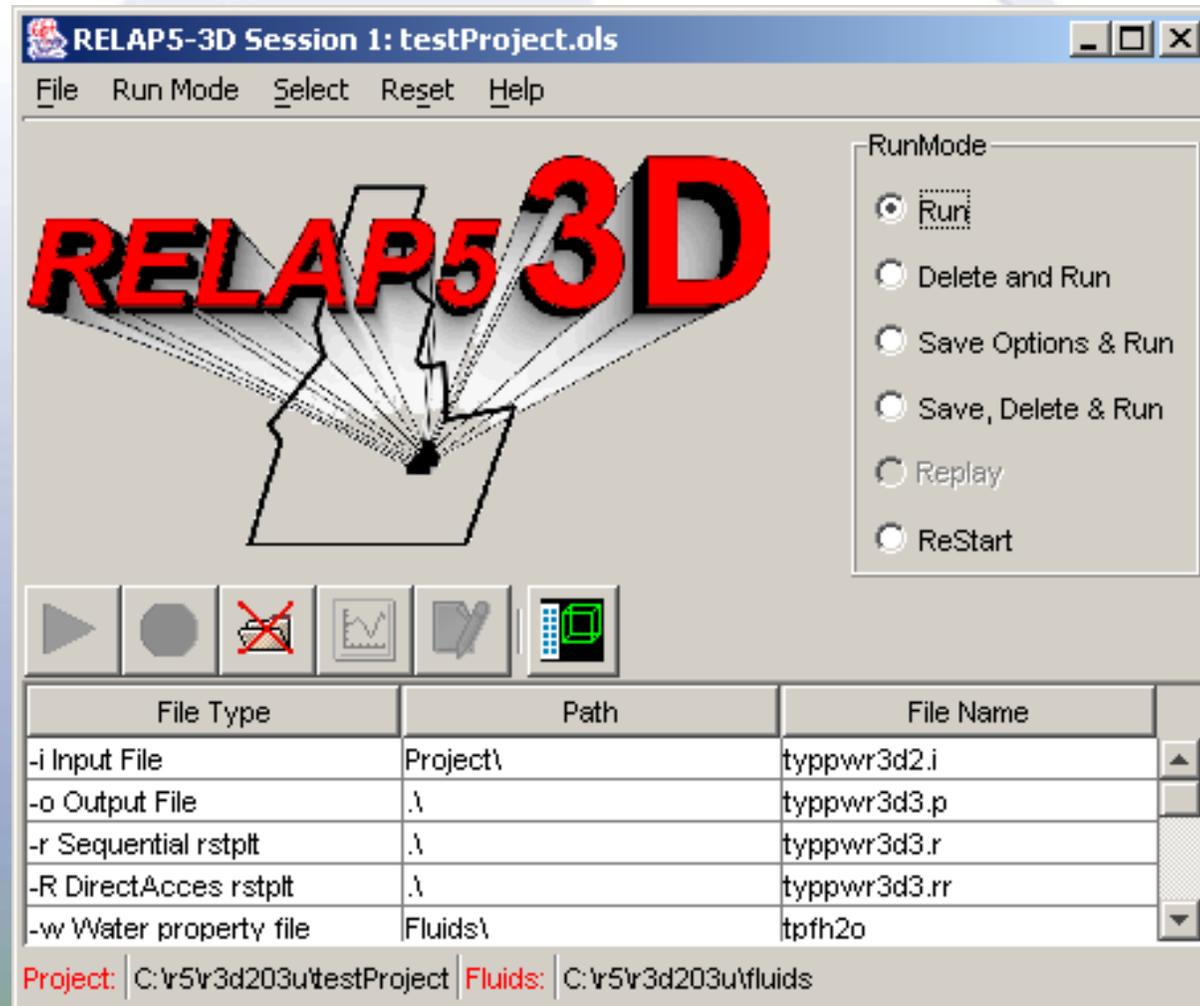
RELAP5-3D Session Window (RSW)

- ***Is the main control window for RELAP5-3D***
- ***Allows the user to set Run Modes from a visible radio button panel***
- ***Has the familiar table of files and options***
- ***Start RELAP5-3D in various Modes***

Run Options Dialog from RGUI 2.2



New RELAP5-3D Session Window



RELAP5-3D Session 1: testProject.ols

File Run Mode Select Reset Help

RELAP5 3D

RunMode

- Run
- Delete and Run
- Save Options & Run
- Save, Delete & Run
- Replay
- ReStart

File Type	Path	File Name
-i Input File	Project\	typpwr3d2.i
-o Output File	\	typpwr3d3.p
-r Sequential rstplt	\	typpwr3d3.r
-R DirectAcces rstplt	\	typpwr3d3.rr
-w Water property file	Fluids\	tpfh2o

Project: C:\r5r3d203u\testProject Fluids: C:\r5r3d203u\fluids

New Functionality in RIS

- ***RIS uses a multiple document interface (MDI).***
 - The MDI “desktop” is located in the “body” of the RIS.
 - ***The body area below the menu and toolbar.***
 - Many sub-windows can reside within MDI desktop.
 - Each session of RELAP5-3D and Pygmalion has a sub-window called a status window.
- ***The editor has its own sub-window(s) on the desktop.***
- ***RIS reconfigures itself according to the license for RELAP5-3D.***

New Functionality in RSW

- ***Convenient mouse button access in Option List Table***
 - Click on file path box to launch browser.
 - Right click on file boxes to open pop-up menu.
 - ***For text file boxes, can select editor or browser.***
 - ***For text restart-plot file boxes, can select plot or browser.***
- ***A toggle button controls activation of the plant image screen.***
- ***Run modes always displayed as panel of radio buttons.***

New User Conveniences in RSW

- ***Run button bulletproofing***
 - Run button is inactive or active based on run mode
 - ***Inactive if print file exists and run mode does not delete***
 - ***Inactive if mode is replay and restart file missing***
 - Reduces dialog screens for print and restart files.
- ***Toolbar buttons have icons rather than text.***

Future Developments

- ***Convert plant image to JAVA***
- ***Add user requested features to RGUI***
- ***Complete hydrodynamic and heat structure features of THUMB***
- ***Add neutronics, trips, controls to THUMB***